

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 10159642  
PUBLICATION DATE : 16-06-98

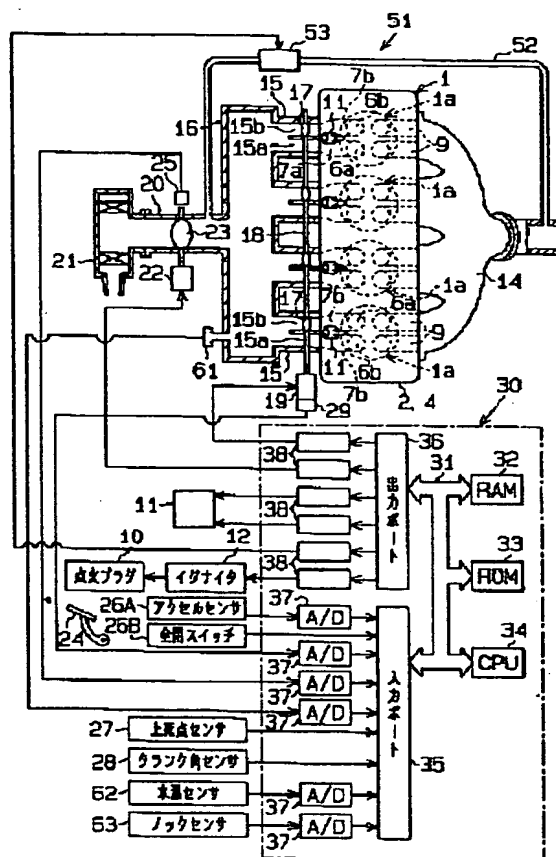
APPLICATION DATE : 26-11-96  
APPLICATION NUMBER : 08315107

APPLICANT : TOYOTA MOTOR CORP;

INVENTOR : OOTANI MOTOMARE;

INT.CL. : F02D 45/00 F02P 5/152 F02P 5/153

TITLE : KNOCKING JUDGING DEVICE FOR  
INTERNAL COMBUSTION ENGINE



**ABSTRACT :** PROBLEM TO BE SOLVED: To suitably judge knocking so as to improve accuracy of judgment in a knocking judging device for an internal combustion engine which can perform stratified burning and so on.

**SOLUTION:** A fuel injection valve-11 is arranged in the peripheral part of the inner wall surface of a cylinder head 4 in the vicinity of the first intake valve 6a and second intake valve 6b of an engine 1, and fuel from the fuel injection valve 11 is ejected directly to the inside of an air cylinder 1a. Also, a knock sensor 63 for detecting the knocking of the engine 1 is attached to the cylinder block 2 of the engine 1. In case that stratified burning is executed, a combustion speed is increased considerably in comparison with a case that homogenous combustion is executed, therefore, timing that knocking can occur is also hastened. On the contrary, in case that stratified burning is executed, an electronic control device (ECU) 30 sets a knocking judging period to an early time. Therefore, a judging period can be justified.

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